

CAPABILITIES

Inspection Services

- ◆ Photographic and videotape documentation
- ◆ Nondestructive ultrasonic, radiographic, magnetic particle, dye penetrant, Barkhausen acoustic emission, and eddy current examination
- ◆ Site documentation and part identification
- ◆ Image enhancement
- ◆ Strain, pressure, and temperature data acquisition on portable computers

Metallurgy and Materials Engineering

- ◆ Failure analysis
- ◆ Material selection and evaluation
- ◆ Microscopy, scanning electron microscope, and energy dispersive x-ray analysis
- ◆ Fractography
- ◆ Microstructural evaluation
- ◆ Mechanical testing
- ◆ Corrosion analysis
- ◆ Environmental effects analysis
- ◆ Welding and joining process evaluation
- ◆ Weld selection and quality evaluation
- ◆ Property and composition testing and evaluation

Mechanical Engineering

- ◆ Failure analysis
- ◆ Linear and nonlinear stress analysis
- ◆ Dynamic and vibration analysis
- ◆ Fatigue, fracture, and creep analysis
- ◆ Combustion and deflagration analysis
- ◆ Thermal and heat transfer analysis
- ◆ Fluid flow analysis
- ◆ Mechanical and machine design analysis
- ◆ Accident reconstruction
- ◆ Risk and reliability analysis
- ◆ Fault tree analysis

Civil Engineering

- ◆ Structural design and analysis
- ◆ Earthquake analysis
- ◆ Offshore structural design and analysis
- ◆ Marine and arctic environment analysis
- ◆ Construction methodology and safety
- ◆ Code evaluation
- ◆ Damage and failure analysis
- ◆ Accident reconstruction
- ◆ Heating, ventilating, and air conditioning design and analysis
- ◆ Fire origin and propagation analysis
- ◆ Collapse analysis

Aerospace Engineering

- ◆ Structural analysis and design
- ◆ Flight control
- ◆ Rocket nozzle thermal analysis
- ◆ Reacting gas thermodynamics
- ◆ Crash damage analysis
- ◆ Helicopter analysis
- ◆ Materials selection
- ◆ Damage tolerance and durability analysis

Marine and Ocean Engineering

- ◆ Ship construction and repair
- ◆ Ship stability analysis
- ◆ Damaged vessel analysis
- ◆ Machine operation and maintenance
- ◆ Power plant design and operation
- ◆ Ship life extension programs

Fossil and Nuclear Power Engineering

- ◆ Failure analysis of power plant equipment and components
- ◆ Performance evaluation and analysis
- ◆ Production cost analysis
- ◆ Availability/reliability/risk analysis
- ◆ Damage assessment, life assessment, and nondestructive examination
- ◆ Materials selection for BWR and pressurized water reactor vessels and piping
- ◆ Risk management analysis

Chemical Engineering

- ◆ Pollution control
- ◆ Alternate energy source evaluation
- ◆ Waste analysis
- ◆ Water treatment analysis
- ◆ Chemical risk assessment and prevention (CHEMRAP)
- ◆ Chemical handling, recycling, and disposal
- ◆ Detection, identification, and treatment of chemical intrusions in sensitive water environments
- ◆ Corrosion analysis and monitoring
- ◆ State/Federal right-to-know law program development
- ◆ Environmental Protection Agency/Resource Conservation Recovery Act program development
- ◆ Modeling of chemical systems

Industrial and Processing Engineering

- ◆ Creep damage assessment and remaining useful life analysis of refinery equipment, pulp and paper mills, etc.
- ◆ Failure analysis of industrial power plant components
- ◆ Accident reconstruction
- ◆ Industrial plant construction, start-up, operation, maintenance, and repair
- ◆ Performance evaluation and improvements of plant components
- ◆ Flaw evaluation
- ◆ Run/repair/retire analyses
- ◆ Technical and economic analyses of alternate fuels
- ◆ Weld inspection evaluation
- ◆ Structural design and analysis of components and systems per American Society for Mechanical Engineers, American Institute of Steel Construction, and American National Standard Institute

Additional Information

For more information, please contact:

Aptech Engineering Services, Inc.
1253 Reamwood Avenue, Sunnyvale, CA 94089
Toll Free: (800) 477-2228
Fax: (408) 734-0445
E-Mail: aptech@aptecheng.com
Website: www.aptecheng.com